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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,653

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Frank Brode

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EXAMINER

PEACE, RHONDA S

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,653	Applicant(s) BRODE ET AL.	
	Examiner Rhonda S. Peace	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-16, 19-23, 26-37 and 41-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-16, 19-23, 26-37 and 41-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2006 and 28 October 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments, see pages 11-12, filed 10/28/2008, with respect to the rejection(s) of claim(s) 35, 37, 41, and 42 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made under 35 U.S.C. 103(a), which is discussed in further detail below. Moreover, upon further consideration, claims 1-11, 13-16, 19-23, 26-34, 36, and 43 are also rejected under 35 U.S.C. 103(a) for the reasons cited below.

Applicant's arguments, see page 11, filed 10/28/2008, with respect to the rejection to claim 40 under 35 U.S.C. 112 and the objection to claim 41 have been fully considered and are persuasive. The objection to claim 41 and the rejection of claim 40 under 35 U.S.C. 112 has been withdrawn.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. The following limitations are recited in the claims but are not shown in Figures 1 and 2: Detachable fitting agents corresponding to one another and formed on the base and connection modules, as recited for example in claims 1 and 2; A reservoir with an immersion fluid arranged in the top part of the optical waveguide connection module, as recited for example in

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claims 12 and 13; Insulation displacement contacts as recited for example in claim 6; and Connecting elements positioned within the base, as recited for example in claim 3.

Therefore, the above limitations must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

With respect to claims 11, 14, 26, and 35, the limitation, “an optical waveguide can be cut off vertical to an axis of the optical waveguide,” is significantly broad, as the term “axis” may refer to any axis within the fiber, such as a radial axis, horizontal axis,

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longitudinal, or vertical axis. It is apparent from Applicant's disclosure, the cutter cuts the optical waveguide vertical to the *longitudinal* or *optical* axis of the optical waveguide. The Examiner suggests the Applicant clarify claims 11, 14, 26, and 35 by amending them to read, "an optical waveguide can be cut off vertical to the optical axis of the optical waveguide," or, "an optical waveguide can be cut off vertical to the longitudinal axis of the optical waveguide."

With respect to claims 1 and 26, the limitation, "a base plate onto which connecting modules for optical waveguides or electrical cores can be arranged, with the connecting modules and the base plate including fitting agents corresponding to one another," is significantly broad as the use of the terms "or" and "can" do not require the placement of either an optical connector or an optical connector on the base plate. The Examiner suggests, for the sake of clarity, amending the claim limitation to read: "a base plate onto which connecting modules for optical waveguides and electrical cores are arranged, with the connecting modules and the base plate including fitting agents corresponding to one another," as it is apparent from the remaining limitations of claims 1 and 26 (for example, lines 6-7 of claim 1) that both the optical and electrical connecting modules are disposed on the base plate.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kropp et al (US 2003/0181098) in view of Smith (US 4,784,456).

Pertaining to claim 1, Kropp et al discloses a connection module comprising a base plate 2 onto which a connecting module 3 for an optical waveguide 7 and a connecting module 4 for electrical cores 41 is arranged wherein the electrical connecting module 4 includes fitting agents 52' and the optical connecting module 3 includes fitting agents 53' and 56' wherein the fitting agents 52' 53' and 56' of the modules correspond to fitting agents 52, 53, and 56 formed on the base plate 2. See

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Figures 1, 5, and 6, ¶ 0020, 0032-0036, and 0051-0054. However, Kropp et al does not disclose a reservoir with an immersion fluid has been arranged in the optical waveguide connecting module. Kropp et al instead discloses a lens 31 is placed between the waveguides coupled by the optical connector, to facilitate proper optical coupling between the waveguides. See ¶ 0035. Smith discloses an optical connector as seen in Figure 2 comprising two optical fibers brought into contact within a housing 10, wherein the housing 10 comprises a reservoir with an immersion fluid and the immersion fluid surrounds the optical fibers at their connection point. See Figures 1-2, col. 3 lines 35-42, and col. 6 lines 47-52. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kropp et al and Smith, thereby arranging a reservoir with an immersion fluid within the optical connector of Kropp et al, as Smith discloses the immersion fluid is an index-matching fluid, which is well-known and widely used in the art to ensure optimum coupling between two waveguides. See Smith, abstract, and col. 6 lines 47-51. Moreover, the claim would have been obvious because the substitution of one known equivalent element, such as index-matching fluid, for another, such as a lens, would have yielded the predictable result of increasing optical coupling between the joined waveguides to one of ordinary skill at the time of the invention. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007).

Addressing claims 2, 3, 5, 6, and 13, Kropp et al in view of Smith disclose the connection module as described above. Moreover, Kropp et al discloses the connecting modules 3 and 4 are detachably connected to the base plate 2 via the use of the above-

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described fitting agents. See ¶ 0034 and 0036. The base plate 2 is equipped with connecting elements 41 to form a carrier system. See ¶ 0035. The connecting module 4 for the electrical cores 41 is designed as a block, as seen in Figures 1 and 5, and includes contacts for the connection of the core. These contacts may be considered “insulation displacement contacts,” as these contacts displace insulative material such that a proper electrical connection is made between the electrical cores. See Figs 5-6, ¶ 0035. The reservoir of Smith is formed by closing the top portion 18 of the housing 10, and the reservoir is at least partially arranged in a top portion 18 of the housing 10. See Smith, col. 6 lines 47-51.

Concerning claims 4 and 7, Kropp et al in view of Smith disclose the connection module as described above. However, Kropp et al does not disclose forming the base plate or the optical waveguides of plastic. Nonetheless, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form either of the base plate or the waveguides of plastic, as plastic is a well-known and widely utilized material in the art, and it has been held to within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Addressing claims 8- 10, Kropp et al in view of Smith disclose the connection module as described above. Kropp et al discloses the waveguides held within transient bores formed within a generic substrate, for example a PCB. See Kropp et al, ¶ 0020. However, Kropp et al does not disclose the optical connecting module as having the housing formed in two parts and V-grooves have been worked into the bottom of the

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two ports, and the top part of the two parts receives an inserted optical waveguide that is pushed into one of the V-grooves when the bottom part and the top part are pushed together. Smith discloses an optical connecting module as having fiber guidance structures 20, specifically wherein the housing 10 is formed in two parts as seen in Figures 1 and 2 and V-grooves 20 have been worked into the bottom of the two parts, for example portion 11, and the top part of the two parts receives an inserted optical waveguide that is pushed into one of the V-grooves 20 when the bottom part and the top part are pushed together. See Smith, col. 5 lines 1-18. It would have been obvious to one of ordinary skill at the time the invention was made to combine the teachings of Smith and Kropp et al, as Smith teaches the above fiber guidance system is easier to use so that durable, high efficiency, low splices can be made faster by less skilled individuals. See Smith, col. 1 lines 54-61.

Claims 11 and 26-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kropp et al (US 2003/0181098) in view of Smith (US 4,784,456) and further view of Poisel et al (US 2004/0035280).

Addressing claims 11 and 26, Kropp et al in view of Smith disclose the connection module as described above. However, neither Kropp nor Smith disclose at least one cutting device arranged in the top part of the housing, by means of which an optical waveguide can be cut off vertical to the optical axis of the waveguide. Poisel et al discloses a device for cutting optical waveguides comprising a top part 3 and a bottom part 2, wherein the top part 3 has a blade 4 to cut an optical waveguide 5 orthogonal to the optical axis of the waveguide. See Poisel et al, Figure 1, ¶ 0009. It

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would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kropp et al, Smith, and Poisel et al to thereby include the cutting blade as taught by Poisel et al, as Poisel et al discloses the above cutter provides the high quality waveguide endface needed for proper coupling of light from one waveguide to another (see Poisel et al, ¶ 0001-0004), and the inclusion of such a blade in the device as described above eliminates the need for a separate device to cut the waveguides, thereby decreasing the production time and manufacturing costs of the connecting module.

Pertaining to claims 27, 28, 30, 31, 33, and 34, Kropp et al in view of Smith and Poisel et al disclose the connection module as described above. Moreover, Kropp et al discloses the connecting modules 3 and 4 are detachably connected to the base plate 2 via the use of the above-described fitting agents. See ¶ 0034 and 0036. The base plate 2 is equipped with connecting elements 41 to form a carrier system. See ¶ 0035. The connecting module 4 for the electrical cores 41 is designed as a block, as seen in Figures 1 and 5, and includes contacts for the connection of the core. These contacts may be considered “insulation displacement contacts,” as these contacts displace insulative material such that a proper electrical connection is made between the electrical cores. See Figs 5-6, ¶ 0035. The reservoir of Smith is formed by closing the top portion 18 of the housing 10, and the reservoir is at least partially arranged in a top portion 18 of the housing 10. See Smith, col. 6 lines 47-51. Kropp et al discloses the waveguides held within transient bores formed within a generic substrate, for example a PCB. See Kropp et al, ¶ 0020.

Concerning claims 29 and 32, Kropp et al in view of Smith and Poisel et al disclose the connection module as described above. However, Kropp et al does not disclose forming the base plate or the optical waveguides of plastic. Nonetheless, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form either of the base plate or the waveguides of plastic, as plastic is a well-known and widely utilized material in the art, and it has been held to within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Claims 14-16, 19-23, 35-37, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US 4,784,456) in view of Poisel et al (US 2004/0035280).

Concerning claims 14, 19, 20 and 35, Smith discloses a connecting module 10 for optical waveguides comprising a housing 10 and fiber guidance structures 20, wherein at least two waveguides (see Figure 2) are configured to be brought into contact in pairs in the housing 10, wherein the connecting module includes fitting agents 42 for mounting to a base plate 43, wherein the housing comprises two parts, with a V-groove 20 being formed in the bottom part and the top part being arranged such that an inserted optical waveguide is pushed into the V-groove 20 when the bottom and top parts are pushed together. See Figures 2 and 4-8, col. 3 lines 35-67, col. 4 lines 20-25, and col. 5 lines 29-35. A reservoir with immersion fluid is arranged in the connection module when the top part is in a closed position. See col. 6 lines 47-52. However, Smith does not disclose at least one cutting device arranged in the top part of the

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housing, by means of which an optical waveguide can be cut off vertical to the optical axis of the waveguide. Poisel et al discloses a device for cutting optical waveguides comprising a top part 3 and a bottom part 2, wherein the top part 3 has a blade 4 to cut an optical waveguide 5 orthogonal to the optical axis of the waveguide. See Poisel et al, Figure 1, ¶ 0009. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Smith and Poisel et al to thereby include the cutting blade as taught by Poisel et al in the connector of Smith, as Poisel et al discloses the above cutter provides the high quality waveguide endface needed for proper coupling of light from one waveguide to another (see Poisel et al, ¶ 0001-0004), and the inclusion of such a blade in the device as described above eliminates the need for a separate device to cut the waveguides, thereby decreasing the production time and manufacturing costs of the connecting module.

Addressing claims 16, 21, 37 and 41, Smith in view of Poisel et al disclose the connecting module as described above. Moreover, Smith discloses the V-groove arrangement and cooperative nature of the top and bottom parts of the housing, as described above, act to also secure and center the fiber sleeve 29 within the V-groove 20. See Figure 2 and 4-7, col. 4 lines 19-25 and col. 5 lines 1-18. However, Smith does not disclose transient bores as the fiber guidance structures, and instead uses V-grooves to secure and precisely place the waveguides within the connecting module. Nonetheless, it would have been obvious to one of ordinary skill at the time the invention was made to substitute transient bores for V-grooves as the fiber guidance structures, as the substitution of one known equivalent element, such as V-groove, for

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another, such as a bore, would have yielded the predictable result of providing precise placement and security of the optical fiber to one of ordinary skill at the time of the invention. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007).

Pertaining to claims 15, 22, 23, 36, 42 and 43, Smith in view of Poisel et al disclose the connecting module as described above. Note Smith does disclose the use of optical fibers, but does not disclose the material from which said fibers are formed. Therefore, Smith does not disclose forming the base plate (or housing) of a plastic material or forming the optical waveguides as plastic fibers or glass fibers. Nonetheless, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the base plate of a plastic material and form the optical waveguides as plastic fibers or glass fibers, as plastic is a well-known and widely utilized material in the art, and in a similar manner, both plastic and glass optical fibers are well-known and widely utilized within the art, and it has been held to within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rubinstein et al (US 2007/0237467) discloses a system for reinforcing hybrid splice lines having an optical connection between optical fibers and an electrical connection between electrical wires.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571)272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571) 272- 2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rhonda S. Peace/
Examiner, Art Unit 2874

/Uyen-Chau N. Le/
Supervisory Patent Examiner, Art Unit 2874

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